REMARKS

Applicant has now had an opportunity to carefully consider the Examiner's comments set forth in the Office Action of August 6, 2004. Reconsideration of the application is requested.

Corrections to the Specification

The Examiner requested Applicant's assistance in proofing the specification for minor errors. As per the Examiner's request, Applicant has amended paragraphs 0037, 0052, 0053, 0061, 0062, 0064, 0066, and 0069 of the specification to correct certain informalities with respect to grammar and punctuation.

The Office Action

Claims 1, 2, 4, 8, 9, 11, 17, and 18 were rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 5,081,595 to Moreno, et. al. in view of Japanese Publication 05-261962 to Takao.

Claims 6 and 13 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Moreno in view of Takao, and in further view of U.S. Patent No. 5,206,686 to Fukui, et. al.

Claims 3, 5, 7, 10, 12, and 14-16 were objected to as being dependent upon a rejected base claim, but would be allowable if written in independent form. Applicant gratefully acknowledges the Examiner's indication of allowable subject matter.

Claims 1-18 remain in this application.

The Subject Embodiment

The subject embodiments relate to a method and system for updating and applying individualized calibrated tone-reproduction curves to different media types and to different media type and halftone combinations. In traditional systems employing TRCs, no method or system exists that permits a user to specify a specific TRC based on media type or media/halftone combination. Moreover, traditional systems do not show a method or system that permits a user to specify a specific TRC on a page basis within a single print job, or to readjust a plurality of TRCs based upon the calibration of a single TRC used as a reference base. It is thus one advantage of the subject embodiments that tone-reproduction curves calibrated for specific media types and/or

media/halftone combinations may be selected, updated, and applied to various media types and media/halftone combinations.

The Cited Art

The first reference cited by the Examiner, Moreno et al., concerns a high speed electronic printing system at the macro level. The goal in Moreno is to allow multiple stacks of media to be used in a high speed printing environment where only a limited number of drawers exist to handle the different media stacks. In a traditional printing system, the entire system must be stopped each time the media changes because the operator must load the next required stack of media into a drawer for that particular job. This interruption causes both delay and error, decreasing the efficiency of the entire system. Moreno thus shows a method for providing uninterrupted processing of print jobs by notifying a user, during real time printing, when new media must be loaded, and then allowing the user to load the media without stopping the processing of the job. In other words, the chief goal of Moreno is to increase the efficiency of a high speed printing process at the macro system level.

On the other hand, the second cited reference, Takao, concerns media on a micro level, addressing the problem of providing characteristics for different media so that output quality might be enhanced. Takao discriminates between a single sublimation ink sheet and a single melted ink sheet, and then selects between two existing gamma conversion characteristics. Use of this gamma characteristic helps increase the printing accuracy of the printer output. Thus, Takao addresses a quite different problem, namely that of increasing the quality of a photographic output print.

The Examiner will appreciate that the third cited reference, Fukui et al., also concerns printing on the micro level. Fukui is directed at producing a higher quality output image, i.e. increasing the fidelity of the half-tone image to be reproduced, by integrating automatic density control, gradation correction, and elimination of fog into one apparatus present in a copier. The resultant apparatus is useful to increase the fidelity of the output image.

There is no motivation to combine the two cited references.

The mere fact that references can be combined or modified does not render the resultant combination obvious unless the prior art also suggests the desirability of the

combination. No motivation to combine Moreno and Takao has been suggested. The two cited references are aimed at solving totally disparate problems. One of ordinary skill in the art would not look to Moreno – an invention designed to increase system-wide efficiency in a high speed printing system by directing a user to physically load media into a proper drawer – to solve the problems with which Takao is concerned, i.e. producing a higher quality output image. Neither would one of ordinary skill look to Fukui, which addresses similar output quality issues as Takao, to solve the problems of Moreno, i.e. increasing the efficiency of a high speed system. Therefore, the subject embodiments, as originally claimed and disclosed, remain non-obvious.

The claims are patentably distinguished over the teachings of the references.

Even if Moreno and Takao may be properly combined, the claims are patentably distinguished over their teachings. While Takao does teach gamma conversion functions, Takao does not teach calibration, i.e. tone reproduction curves which are calibrated for a specific media type. The gamma conversion means of Takao has a plurality of kinds of gamma-characteristic conversion functions. However, Takao does not show that these functions are calibrated for a specific media. Rather, Takao instead teaches that the gamma conversion is conducted comparatively from low density to high density. This suggests that low density and high density gamma conversion functions are pre-stored. Takao then selects the type of function, i.e. low or high density, depending on whether the discriminated page is sublimation ink or melted ink. In other words, Takao does not suggest that the gamma conversion functions are themselves specifically calibrated for or associated with the type of ink sheet discriminated, as would be required of a tone reproduction curve calibrated for a specific media type. Claim 1, by contrast, recites the limitation of providing a plurality of *calibrated* tone-reproduction curves, each calibrated tone reproduction curve *corresponding* to a distinct media type. This feature is not taught by Takao. Neither is it taught by Moreno. As such, claim 1 is patentably distinguished over the teachings of the cited art, and is properly in condition for allowance.

As noted by the Examiner, independent claims 8 and 17 recite system and method claims, respectively, corresponding to the above method claim 1. Therefore, claims 8 and 17 are patently distinguished over the cited art for the same reasons as discussed above. As such, claims 8 and 17 too are in proper condition for allowance.

Moreover, since all other claims depend on one of claims 1, 8, or 17, all other claims are also in condition for allowance.

Finally, Applicant agrees with the Examiner that claims 3, 5, 7, 10, 12, and 14-16 are allowable because no prior art discloses or suggests providing a plurality of calibrated tone-reproduction curves, each tone-reproduction curve corresponding to a distinct halftone type and media type combination.

CONCLUSION

For the reasons detailed above, it is submitted all claims remaining in the application (Claims 1-18) are now in condition for allowance. The foregoing comments do not require unnecessary additional search or examination.

In the event the Examiner considers personal contact advantageous to the disposition of this case, he/she is hereby authorized to call Patrick R. Roche, at Telephone Number (216) 861-5582.

Respectfully submitted,

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11/8/04
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